

DOCKET NO.: VTN-0601DIV
Application No.: 10/729,748

PATENT

This listing of claims will replace all prior versions, and listings, of claims in the application.

WHAT IS CLAIMED IS:

1. (Previously Presented) A method for surface treatment of a plastic article, comprising a step of immersing said plastic article in an aqueous solution of a carboxyl functional polymer having a weight average molecular weight of 200 or more, wherein the surface of said plastic article is not pretreated prior to said immersing step and wherein said aqueous solution contains no coupling agents.
2. (Currently amended) A method for surface treatment of a plastic article according to claim 1, ~~wherein said step~~ further comprising:
immersing said plastic article in an aqueous solution of a second polymer having a weight average molecular weight of 200 or more.
3. (Previously Presented) A method for surface treatment of a plastic article according to Claim 1 or 2, wherein said plastic article is a hydrogel.
4. (Original) A method for surface treatment of a plastic article according to Claim 3, wherein said plastic article has water content greater than 15%.
5. (Previously presented) A method for surface treatment of a plastic article according to Claim 3, wherein said hydrogel comprises at least one of the silicon atom and/or a fluorine atom.
6. (Currently Amended) A method for surface treatment of a plastic article according to Claim 5, wherein said hydrogel has oxygen permeability coefficient greater than ~~50x10⁵~~50x10⁻¹¹ (cm²/sec)[mlO₂/(ml hPa)].
7. (Original) A method for surface treatment of a plastic article according to Claim 1 or 2, wherein said plastic article is a macromolecule substantially not containing water.

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8. (Original) A method for surface treatment of a plastic article according to one of Claim 1 or 2, comprising a step of immersing said plastic article in an aqueous solution having a pH of 6 or less.

Claim 9 canceled.

10. (Previously presented) A method for surface treatment of a plastic article according to Claim 1, wherein said carboxyl functional polymer is a polymer selected from the group consisting of polymethacrylic acid, polyitaconic acid, and a copolymer of methacrylic acid, maleic acid, itaconic acid, or maleic anhydride and a reactive vinyl monomer, or a mixture thereof.
11. (Original) A method for surface treatment of a plastic article according to one of Claim 1 or 2, comprising a step of immersing said plastic article in an aqueous solution having a pH of 8 or higher.
12. (Original) A method for surface treatment of a plastic article according to Claim 1 or 2, wherein said second polymer having the weight average molecular weight of 200 or more is a polyethyleneimine.
13. (Original) A method for surface treatment of a plastic article according to Claim 2, wherein said second polymer having the weight average molecular weight of 200 or more is a nonionic water-soluble polymer.
14. (Original) A method for surface treatment of a plastic article according to Claim 13, wherein said nonionic water-soluble polymer is a polymer selected from the group consisting of a polyacrylamide, polydimethylacrylamide, polyvinyl pyrrolidone, polyethylene glycol, polyethylene oxide, and polyvinyl alcohol, or a mixture thereof.

Claims 15-38 canceled.

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39. (New) The method of claim 1 wherein said carboxyl functional polymer comprises polyacrylic acid.
40. (New). The method of claim 39 wherein said polyacrylic acid has a molecular weight of about 5,000 to about 250,000.
41. (New). The method of claim 1 wherein said plastic article is washed after said immersing step.
42. (New). The method of claim 1 wherein said plastic article is autoclaved after said immersing step.
43. (New). The method of claim 1 wherein said plastic article is autoclaved after said washing step.
44. (New) The method of claim 13 wherein said nonionic water-soluble polymer comprises polyvinyl-pyrrolidone.
45. (New) The method of claim 13 wherein said carboxyl functional polymer comprises polyacrylic acid.
46. (New) The method of claim 45 wherein said nonionic water-soluble polymer comprises polyvinyl-pyrrolidone.
47. (New) The method of claim 1 wherein said plastic article is a contact lens.
48. (New) The method of claim 39 wherein said plastic article is a contact lens.
49. (New) The method of claim 46 wherein said plastic article is a contact lens.
50. (New) The method of claim 47 wherein said plastic article is a contact lens.

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51. (New) The method of claim 1 or 2 wherein said plastic article has a dynamic contact angle of less than about 80°.
52. (New) A method for surface treatment of a plastic article according to Claim 12, wherein said nonionic water-soluble polymer is a polymer selected from the group consisting of a polyacrylamide, polydimethylacrylamide, polyvinyl pyrrolidone, polyethylene glycol, polyethylene oxide, and polyvinyl alcohol, or a mixture thereof.
53. (New) A method for surface treatment of a plastic article according to Claim 45, wherein said nonionic water-soluble polymer is a polymer selected from the group consisting of a polyacrylamide, polydimethylacrylamide, polyvinyl pyrrolidone, polyethylene glycol, polyethylene oxide, and polyvinyl alcohol, or a mixture thereof.